

Lesson Plan: Comparing Power Strips for Efficiency

Subject

Science / Technology

Duration

1 Hour

Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the components of a power strip.
- **Explain** the concept of energy efficiency.
- **Compare and contrast** two different types of power strips.
- **Analyze** which power strip is more efficient based on given criteria.
- **Justify** their choice of the most efficient power strip using evidence.

Materials

- Two different types of power strips
- Worksheets for notetaking and comparison
- Chart paper and markers
- Computers/tablets for research

Lesson Steps

Introduction (10 minutes)

- **Hook:** Show students a short video on phantom energy and power strip overload to help them think about safety and what is best for energy efficiency.
- **Discussion:** Ask students to share what they know about power strips and energy efficiency. Ask them where power strips are used and why.
- **Objective Sharing:** Explain the lesson objectives and why understanding efficiency is important.

Direct Instruction (15 minutes)

- **Components of Power Strips:** Introduce and explain the different parts of a power strip (outlets, surge protector, switch, etc.).
- **Energy Efficiency:** Define energy efficiency and discuss how it can be measured (Wattage, energy consumption over time, etc.).
- **Types of Power Strips:** Briefly describe the two types of power strips being compared.

Guided Practice (20 minutes)

- **Hands-On Activity:**
 - Divide students into small groups and give each group two power strips. Be sure to use the power strip from the kit and then one other one. You can look at the packaging of the power strip from the kit to gather more information.
 - Have the students make initial observations about the similarities and differences between the power strips and record the observations in their science journal.
- **Data Collection:** Have students plug in the same devices into both power strips and make observations about what happens with each power strip. Can they hold the same number of items? Do the items react when other items are plugged in? Is there phantom energy? What are the safety aspects of each power strip? The students should record their data in their science journals.
- **Comparison:** Guide students to analyze their data and compare the efficiency of the two power strips.

Independent Practice (10 minutes)

- **Research:** Allow students to use computers/tablets to find additional information on energy efficiency and power strips.
- **Recommendation:** Students will create a statement of recommendation to which power strip they think is more energy efficient and safer

Conclusion (5 minutes)

- **Group Discussion:** Bring the class together to discuss their findings. Which power strip was more efficient and why?

- **Justification:** Ask students to justify their choice using the data and research they collected.
- **Wrap-Up:** Summarize the main points of the lesson and explain how energy efficiency plays a role in their everyday lives.

Homework

- **Extension Activity:** Have students write a persuasive argument for their parents on why they should use this type of power strip in their home.